Project on Standardized Validation of Physical Properties Models

J.P. O'Connell

Department of Chemical Engineering

University of Virginia

Charlottesville, VA 22903 USA

R. Gani
Department of Chemical Engineering
Technical University of Denmark
2800-Lyngby, Denmark

The international SVPPM project is developing methodology, procedures and programs to test current and proposed models of thermodynamic properties. The need for such a project has arisen from the inability of process simulation users to determine enough about the accuracy and reliability of models to take the effort to fully implement them. The result has been limited application of new models which may be limiting important advances and frustrating both users and generators of models.

The project's goal is to discriminate the content, parameterization and limitations in models used in chemical process design and simulation to provide adequate information about the utility of implementation. This will be done through open access to tests at various levels:

- · Mathematical and Thermodynamic Consistency
- · Characteristics at Extreme and Limiting Conditions
- · Correlative Accuracy and Predictive Reliability with Standardized Data
- · Application Robustness, Sensitivity and Limitations

Many of the concepts, procedures and goals are based on similar efforts in flowsheeting and process control that have successfully assisted practitioners to evaluate procedures in these areas. Extensive interaction with industrial properties experts, process simulators and computer-aided network coordinators has provided stimulation and guidance during the initiation and development of the project. A website has been established and such issues as input/output, storage and security are being addressed.

The talk will describe the elements of the validation tests, give a summary of activities and experience so far, and indicate planned demonstrations of the program during the next year. Discussion from the audience will be solicited to continue optimizing the program directions and outcomes.